

# US3A THRU US3M

## SURFACE MOUNT HIGH EFFICIENCY RECTIFIER

Reverse Voltage - 50 to 1000 Volts    Forward Current - 3.0 Ampere

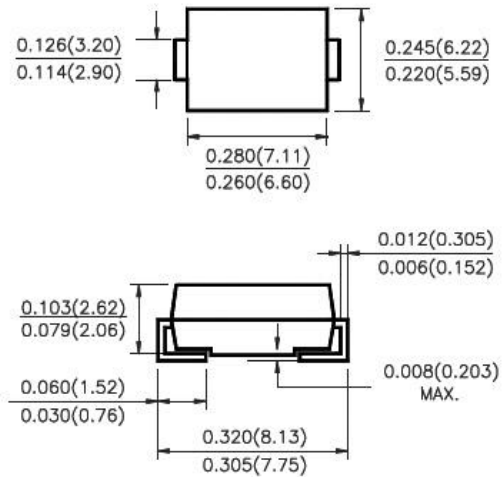
### FEATURES

- ◆ Plastic package has UL flammability Classification 94V-0
- ◆ Glass Passivated chip junction
- ◆ Built in strain relief
- ◆ Fast switching speed for high efficiency
- ◆ High temperature soldering guaranteed: 250°C/10 seconds

### Mechanical Data

- ◆ Case: JEDED DO-214AB transfer molded plastic
- ◆ Terminals: Solder plated, Solderable per MIL-STD-750, Method 2026
- ◆ Polarity: Color band denotes cathode end
- ◆ Weight: 0.007 ounce, 0.25 gram

### DO-214AB (SMC)



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%

PARAMETER	SYMBOL	US3A	US3B	US3D	US3G	US3J	US3K	US3M	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	VOLTS
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	VOLTS
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	VOLTS
Maximum Average Forward Rectified Current At $T_L = 105^\circ\text{C}$ (NOTE 1)	$I_{(AV)}$	3.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100							Amps
Maximum instantaneous forward voltage at 3.0A	$V_F$	1.0			1.3	1.7			VOLTS
Maximum DC Reverse Current at Rated DC blocking voltage	$I_R$	$T_A = 25^\circ\text{C}$	10						uA
		$T_A = 125^\circ\text{C}$	200						
Maximum Reverse Recovery Time Test conditions $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{RR} = 0.25\text{A}$	$t_{rr}$	50				100			nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	$C_J$	80				50			pF
Typical Thermal Resistance (NOTE 1)	$R_{\theta JA}$	55							°C/W
	$R_{\theta JL}$	17							
Operating Junction Temperature	$T_J$	-55 to +150							°C
Storage Temperature Rang	$T_{STG}$	-55 to +150							°C

Note: 1. Thermal resistance from Junction to ambient and from junction to lead mounted on P.C.B. with  $0.3 \times 0.3''$  ( $8.0 \times 8.0\text{mm}$ ) copper pad areas

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### RATING AND CHARACTERISTIC CURVES US3A THRU US3M

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

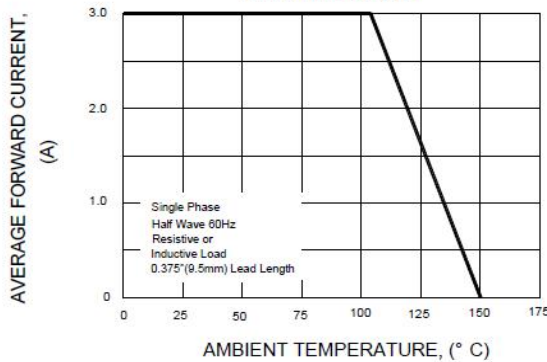


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

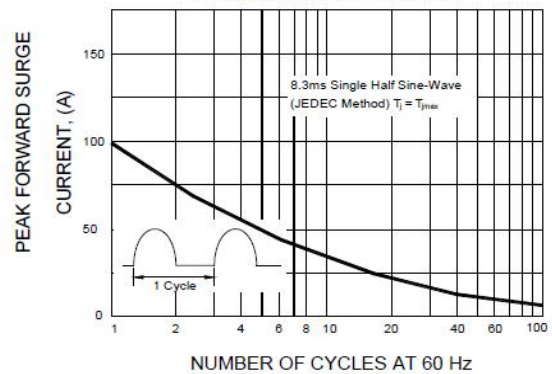


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

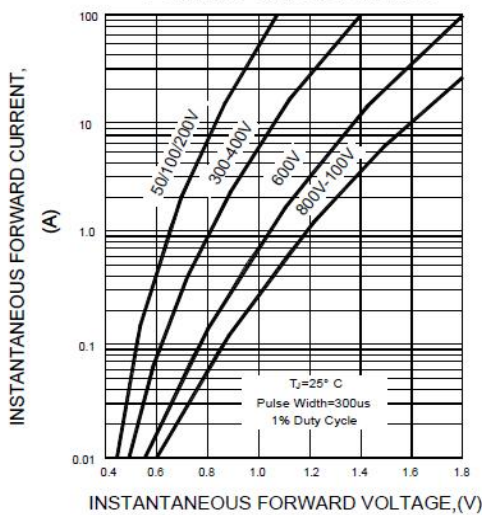


FIG.4-TYPICAL REVERSE CHARACTERISTICS

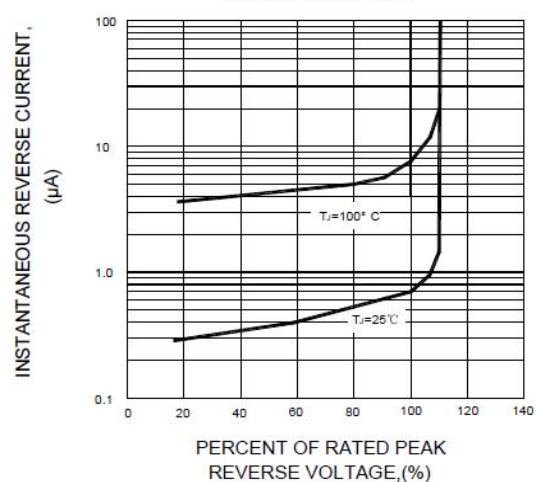


FIG.5-TYPICAL JUNCTION CAPACITANCE

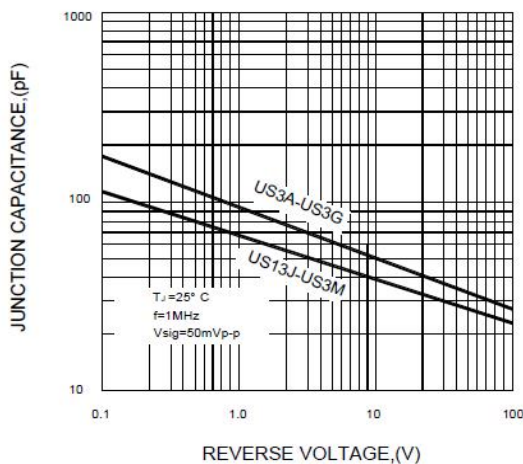
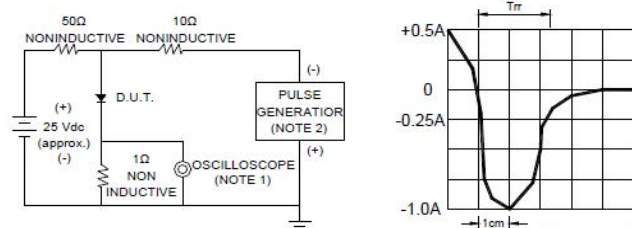
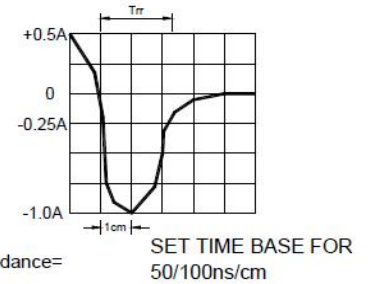


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES : 1. Rise Time=7ns max. Input Impedance= 1 megohm. 22pF  
2. Rise time=10ns max. Source Impedance= 50 ohms



Note: Specifications are subject to change without notice. For more detail and update, please visit our website.